

U.S. DEPARTMENT OF ENERGY

DOE ACTION PLAN FOR IMPROVED MANAGEMENT OF BROOKHAVEN NATIONAL LABORATORY

JULY 1997

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Summary of Comments on the Draft DOE Action Plan for Improved Management of Brookhaven National Laboratory

Comments were received from four individuals in external organizations, and from two individuals within the Laboratory. Several comments expressed agreement with the characterization of problems and support for the planned actions. Some reinforced the need to keep regulators and the community involved and informed. The Department is committed to this goal.

One comment suggested that a Citizen Advisory Committee be formed, that the Committee have representation on the Headquarters-Brookhaven Management Council, and that the Committee vote on the selection of the new contractor for the Laboratory. The Department is currently working with the Brookhaven community to determine the preferred format (e.g., a citizens advisory committee) for community involvement. It is not appropriate to have outside groups participating in DOE management discussions that include budget formulation. However, the Brookhaven Group will continue to keep regulators and the community informed and will strengthen lines of communication with the community. Additionally, although direct public participation in procurement decisions is problematic, the Department will work closely with the community to incorporate their ideas into the solicitation and resulting contract.

Another comment suggested that the Action Plan identify specific goals relating to changing the culture of the Laboratory with respect to environment, safety and health. It was also suggested that a benchmarking effort be established to include a high goal for performance, such as ranked in the top 5 percent nationally. DOE agrees that goals should be established to drive performance to success. Specific operational performance measures and metrics for ES&H will be established by the Department and incorporated into the contract and/or subsequent performance evaluation plans.

Another comment recommended that DOE be directly responsible for managing ES&H at the Laboratory (rather than the contractor). However, this would remove responsibility from the individuals who are closest to the situation. As discussed in Section 4.0, actions are underway to fully implement Integrated Safety Management at Brookhaven National Laboratory, including the Laboratory's Management System Improvement Program to integrate ES&H into all facets of Laboratory operations.

Finally, one comment suggested conducting an organizational survey within the Laboratory to allow for measurement of cultural improvement over time. This is a good idea which will be incorporated into the Action Plan.

Executive Summary

Brookhaven is one of the Department's major multi-program laboratories, with unique, world-class research facilities and an impressive track record of scientific achievement. It is important to the nation that this laboratory continues to provide its science and technology benefits, while assuring safety and protecting the environment. Equally important, Brookhaven must be a good neighbor in the community.

Secretary of Energy Federico Peña

Actions

- 1 Establish Clear Roles and Responsibilities for DOE Headquarters and Field Offices
- 2 Establish Corporate Budget Formulation and Execution Process for ES&H and Infrastructure
- 3 Strengthen Energy Research's Organizational Focus on ES&H and Lab Operations
- 4 Change the ES&H Culture of DOE and Brookhaven National Lab
- 5 Expand Community Involvement and Lab Outreach
- 6 Involve the Local and Scientific Communities in deciding the Future of the High Flux Beam Reactor

The Department of Energy (DOE) and Brookhaven National Laboratory are working together to improve the way they protect the environment, provide for the safety and health of employees, and address local community concerns and interests while conducting world-class science.

The recent discovery of a long-existent leak of tritiated water from the spent fuel storage pool of the High Flux Beam Reactor led DOE to step up a previously planned review of the management of environment, safety and health (ES&H) activities at the Laboratory resulting in an Oversight Report entitled *Integrated Safety Management Evaluation of the Brookhaven National Laboratory* (hereafter "Oversight Report"). The investigation, along with other observations and previous reports, shows that the management and operating contractor at Brookhaven National Laboratory and DOE should make improvements in Laboratory management and oversight. The manner in which the Brookhaven National Laboratory interacts with the public, and the extent to which the public is encouraged to participate in Laboratory decision-making, must be significantly improved.

This Plan establishes critical actions that will continue the ongoing effort to build trust and confidence within the Long Island community and to ensure that world-class science is performed safely, responsibly, and openly. In effect, this plan is a road map for improvements that connect the Oversight Report findings and community concerns to specific DOE actions with responsible parties and milestones identified. A draft version of this plan was broadly circulated in the Brookhaven community for comment. Some comments were incorporated into this final version of the plan, and all comments were carefully considered.

The Oversight Report is based on a framework called Integrated Safety Management, which thoroughly integrates protection of the environment, the safety and health of the community, and workers with all work performed. This mechanism is the best available to ensure that science is performed safely and with regard for the environment. Implementation of the Integrated Safety Management principles is a long-term DOE activity, but efforts are already underway to make these principles central to the work performed at Brookhaven National Lab. These principles served as the foundation for the DOE review of the Laboratory.

In December 1996, elevated concentrations of the radioactive isotope tritium were discovered in a groundwater monitoring well near the High Flux Beam Reactor. This detection led DOE to launch an intensive investigation. Data points to the reactor spent fuel pool as the source of the tritium plume. The Laboratory has taken samples from temporary wells and has effectively characterized the extent of the tritium plume. The highest concentration of tritium in the groundwater is located near the reactor and is about 32 times the Environmental Protection Agency's standard for drinking water. The part of the plume that is above the drinking water standard extends about 2,200 feet south of the reactor. The current sources for drinking water for Brookhaven National Laboratory employees are not affected by the plume of tritiated water. The Environmental Protection Agency has certified that the community drinking water is safe.

At the direction of DOE, Brookhaven National Laboratory has designed and installed an interim remediation system to pump tritiated water from the leading edge of the plume to a recharge basin east of the reactor. All spent fuel will be removed from the storage pool and all water from the reactor will be placed in tanks to remove the source of the groundwater contamination.

DOE evaluation of the incident indicates that the tritium leak and other problems at Brookhaven are not isolated events. There is an institutional problem in the way ES&H and other responsibilities are performed.

On May 1, 1997, Secretary of Energy Federico Peña released the findings of the Oversight Report. The report outlined five specific areas of weakness as well as opportunities for improvement within the framework of the Department of Energy's Integrated Safety Management System.

Secretary Peña announced his response to the findings of this report and other areas of concern at the Laboratory: termination of the Laboratory's existing management and operating contract with Associated Universities, Inc.; top-level appointments to manage the transition to a new contract -- John Wagoner, manager of DOE's Richland Operations Office in Washington State, and Dean Helms, senior manager at Thomas Jefferson National Accelerator

Facility in Virginia; assurances from Dr. Lyle Schwartz, interim director of Brookhaven, that he will provide leadership and stewardship in the transition; and an Environmental Protection Agency full-facility inspection to ensure the Lab's compliance with environmental laws.

Action Plan

Secretary Peña also directed Dr. Martha Krebs, Director of DOE's Office of Energy Research, to complete an action plan to correct the problems identified in the report and other reviews of operations and to address issues relating to community relations. This action plan responds to that directive.

However, there are issues at the Brookhaven site, not directly addressed in the oversight report, that are related to either ES&H management or community trust and are also addressed in this Plan. Infrastructure investments over the long term are included since they affect the circumstances influencing ES&H and work-planning decisions. In addition, both the national scientific community and the local community around Brookhaven National Laboratory are concerned about the future of the High Flux Beam Reactor beyond cleanup of the tritium plume.

The weaknesses outlined in the Oversight Report demonstrate the need to:

- A) Clarify Roles & Responsibilities
- B) Strengthen Management Processes and Organizational Infrastructure
- C) Balance Research and ES&H Activities
- D) Improve Processes to Establish and Track ES&H Priorities
- E) Establish Lab Work Plan and Control Systems

This Action Plan does not reflect every activity currently taking place at the Laboratory. Many additional improvements have already been implemented and many more are moving forward.

Improving conditions at Brookhaven depends on how well Laboratory management can listen to and integrate the concerns of the community; protect the environment, workers, and citizens; and sustain the demands of world-class research and development. The principles of Integrated Safety Management will guide this effort. Public trust and world-class, safe science are measures of success.

Therefore, this Action Plan recommends changes that are linked to the specific issues at Brookhaven National Laboratory such as the findings of the Oversight Report and the future of the High Flux Beam Reactor, and to DOE complex-wide issues, such as:

- Laboratory "landlord" responsibilities,
- the organization of the Office of Energy Research, and
- the management structure and leadership focus of the DOE laboratories.

The process of developing solutions for Brookhaven National Laboratory has effected Department-wide systems and processes. For example, tracking progress of ES&H investments at Brookhaven National Laboratory will become part of a new DOE process to plan, prioritize, budget and track ES&H investments at all DOE sites. Therefore full implementation of this Action Plan will help DOE to be a better steward for the American people in supporting essential research nationwide.

Actions

This Action Plan addresses the weaknesses in the Oversight Report. Actions are summarized below and discussed in more detail in the body of this Plan. A detailed implementation plan will be prepared describing specific tasks necessary for successful completion of the actions outlined in this Action Plan.

Action 1.0

Establish Clear
Roles and
Responsibilities

DOE Headquarters, field, and site offices will describe more explicitly how ES&H priorities are tracked, how balance between ES&H activities and research can be achieved, and how work plan and control systems can be designed. They will also advance discussions on the roles and responsibility of DOE laboratory “landlords.” The landlord is the principal DOE organization responsible for site-wide programs, infrastructure, and ES&H. Action 1.0 will make roles and responsibilities clear, pertinent, and productive, leading to safer operations at the DOE Laboratories.

Action 2.0

Establish Corporate
Budget Process for
ES&H and
Infrastructure

DOE will better coordinate the assessment and allocation of ES&H resources. This will improve ES&H compliance and prevent future problems at the Laboratories. Action 2.0 will help balance ES&H priorities with research needs.

Action 3.0

Strengthen Energy
Research’s
Organizational
Focus on ES&H and
Lab Operations

Energy Research is the landlord for Brookhaven National Laboratory. The Office of Energy Research will reorganize to ensure that decisions regarding ES&H funding, prioritization, and implementation are thoughtful, timely, and a part of the everyday work performed. Action 3.0 will redefine the landlord responsibilities for ES&H at Brookhaven and other DOE laboratories.

Action 4.0

Change the ES&H
Culture of DOE and
Brookhaven

A major challenge for Brookhaven National Laboratory and DOE is to create a change in culture. The informal approach to environment, safety and health issues at Brookhaven National Laboratory resulted in inadequate protection and prevention measures. Both the interim leadership at Brookhaven National Laboratory and DOE are committed to instilling and reinforcing a culture of safe and environmentally sound science, and to initiating management structures that sustain the culture through the coming transition.

A Management Systems Improvement Program has been established at Brookhaven National Laboratory to put in place the changes necessary and to express the values associated with a change in culture. The plan involves a leadership initiative to restructure upper management at the Laboratory; an Integrated Safety Management initiative to implement the recognized principles of good management; and a community participation initiative to improve dialogue between all interested parties. Action 4.0 will formalize the way the Laboratory addresses ES&H issues.

Action 5.0

Expand Community
Involvement &
Outreach

Secretary Peña emphasized the need for an integrated approach for community involvement at Brookhaven. He made a commitment to build trust and confidence, create a more open and accessible environment and ensure public participation -- not just awareness -- in decision-making. The actions to meet that commitment are: include local officials in Phase II and III of the EPA environmental evaluation; increase the quantity and accessibility of information relating to the labs; improve physical access to the Lab; institutionalize public participation through various channels, such as a community advisory board and clearly identified, accountable staff who will serve as a resource and bridge to the community. Finally, the Department will identify and share approaches to successful public participation so that efforts at Brookhaven can be informed by "best in class" models. Also, DOE is already incorporating community interest in the selection of a new contractor for the Lab.

Action 6.0

Involve the Local
and Scientific
Communities in
deciding the Future
of the High Flux
Beam Reactor

The High Flux Beam Reactor has been an important source of neutrons for scientific research in the U.S. The reactor was shut down for refueling at the time of the discovery of tritium in the groundwater, the source of which is believed to be the reactor spent fuel pool. The reactor has not been restarted, and a number of safety upgrades would

need to be made before restart is possible. The issue of whether to restart operation of the reactor, after safety modifications are made, is of great importance and concern to the scientific community, Brookhaven National Laboratory, and local citizens. DOE's decision-making process will include a review by the scientific community and input from the local community. Action 6.0 will provide all viewpoints on the High Flux Beam Reactor to DOE decision makers.

Next Steps

Improvement in the way DOE and Brookhaven National Laboratory work requires a firm commitment to track and evaluate progress. DOE will monitor and update the action items outlined in this Action Plan. Monthly status reports will be submitted to Secretary Peña for the next six months, and subsequent quarterly reports will be issued until all actions are completed or fully integrated in the new management systems.

The community will receive regular updates on progress. The objectives of the Plan will be incorporated in the performance criteria for the next contract at Brookhaven National Laboratory. Additional work remains for us to move from the DOE/Brookhaven National Laboratory corporate actions to specific milestones that can be tracked and measured to demonstrate that the necessary changes are taking place -- creating a new "safety" culture.

Community Participation

The draft Action Plan was released for public comment on June 10. The comments have been addressed in this final Action Plan, and we appreciate the input and guidance from the community. A summary of public comments is located on page i.

Contacts

Community Information Homepage

URL: www.doe.bnl.gov

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1.0 Establish Clear Roles and Responsibilities for DOE Headquarters and Field Offices

Lack of clarity, inconsistency, and variability in the relationship between headquarters management and field organizations has been a longstanding criticism of DOE operations. This is particularly true in situations when several headquarters programs fund activities at laboratories, such as at Brookhaven National Laboratory. DOE landlords have been identified as responsible for line management of ES&H and infrastructure at their designated laboratories. In practice, however, the roles and responsibilities of the landlord with respect to other DOE Assistant Secretaries and Field Managers have not been clearly defined.

DOE is addressing this complex problem throughout its laboratory system and there have been several DOE studies of the issue. The most recent analyses were completed by the Institute for Defense Analysis and the National Association of Public Administrators. In addition to these formal studies, the DOE Laboratory Operations Board has recently expressed concern over the complexity of DOE oversight at the laboratories.

All of the analyses report similar weaknesses. Resolving this issue will require clear definition and consistent implementation of landlord, tenant, and field responsibilities throughout DOE. Reporting relationships need to be defined and consistently implemented. Full implementation will greatly improve DOE stewardship of its laboratories, including ES&H and infrastructure maintenance at Brookhaven National Laboratory.

This Action Plan is part of a broader DOE complex-wide review. The focus of this effort is to put in place a management structure that will:

- (1) ensure proper balance between program work and ES&H protection;
- (2) clarify lines of authority and responsibility; and
- (3) enhance system efficiency.

As these relationships are identified and put into place, DOE must assure that activities at Brookhaven National Laboratory continue to receive high level

attention and that accountability is maintained at senior levels of DOE and Brookhaven National Laboratory.

Action 1.1

Establish Direct Reporting from DOE Brookhaven Group on site to the Office of Energy Research

Secretary Peña previously announced that John Wagoner, Executive Manager of the DOE Brookhaven Group on site, would report to him. This relationship between the DOE Brookhaven Group and the Secretary should continue through the solicitation and selection process for the next Brookhaven National Laboratory contractor. However, once the next contractor is selected and the contract is in force, the need for continued culture change at the Laboratory is urgent. The requirement for headquarters involvement likely will be high in the early months of the new contract.

To assure this attention to the contractor and its activities at Brookhaven National Laboratory, the manager of the DOE Brookhaven Group will report to the Director of Energy Research. After the first year of the contract, a review of this reporting relationship, supervised by the Office of the Secretary, will take place. The result will be a recommendation on the ultimate reporting chain of the DOE Brookhaven Group.

Prior to the start of the direct reporting, Energy Research will work with all parties to define specific roles and responsibilities for the DOE Brookhaven Group. Energy Research, working with the Office of Field Management, the Chicago Operations Office, and the DOE Brookhaven Group, will identify specific responsibilities for the Chicago Operations Office, showing how technical and administrative support for the DOE Brookhaven Group will be provided. Also, performance measures will be prepared to evaluate progress and to form a basis for a recommendation to the Secretary. This recommendation is specifically related to the DOE Brookhaven Group.

| Dates | Milestones | Lead |
|--------------|--|-----------------------|
| 6/97 | Brookhaven Group reports to Secretary | Secretary |
| 8/97 | Define roles & responsibilities | Dir., Energy Research |
| 11/97 | Brookhaven Group reports directly to Energy Research | Dir., Energy Research |
| 11/98 | Review Brookhaven Group reporting relationship based on performance measures | Secretary |

Action 1.2

Establish
Brookhaven
National Lab/
Headquarters
Management
Council

By the end of July 1997, Energy Research will establish and chair a Headquarters-Brookhaven Management Council composed of Principal Secretarial Officers sponsoring research or supporting operations at Brookhaven National Laboratory, along with the Offices of Field Management, Environment, Safety and Health, and the Chief Financial Officer.

The first task of the Council will be to define, through a Memorandum of Agreement, how to implement respective "landlord" and "tenant" roles at Brookhaven National Laboratory. Tenants at Brookhaven National Laboratory are those Principal Secretarial Officers supporting operations, such as Environmental Management's waste management and clean-up function, and Nuclear Energy's management of the reactor. Another function will be the planning, prioritization and tracking of the ES&H and infrastructure activities at Brookhaven National Laboratory consistent with the requirements of the corporate budget process proposed in Action 2.0.

In particular, the Council will reach agreement on recommendations for FY 98 and FY 99 funding for high priority ES&H and infrastructure activities at Brookhaven National Laboratory, including the continuing tritium remediation. This Council could provide a model for operational oversight at Energy Research's other multi-program laboratories. The Council will be a mechanism to clarify the reporting relationships identified in the Oversight Report.

| Dates | Milestones | Lead |
|--------------|---|-----------------------|
| 7/97 | Establish Headquarters-Brookhaven Management Council | Dir., Energy Research |
| 9/97 | Develop and sign Memorandum of Agreement | Dir., Energy Research |
| 9/97 | Identify responsibilities for on-going tritium remediation and FY 98-99 funding needs at Brookhaven | Dir., Energy Research |
| 12/97 | Conduct first quarterly review of Brookhaven operations | Dir., Energy Research |

2.0 Establish a Corporate Budget Formulation and Execution Process for ES&H and Infrastructure

The Department currently lacks a consistent approach to formulating budgets for ES&H and infrastructure needs at its laboratories. Requirements are identified by the individual sites and field organizations. Different programs and budget mechanisms are identified as possible sources of funding; for example, at Brookhaven National Laboratory, these are Energy Research, Environmental Management, construction line items, general plant projects, direct operating funds and laboratory overhead. These different funding methods are appropriate, but they do not make it easy to track the ES&H needs corporately. The choice of program funding source and funding mechanism varies, depending on the scale of funding required, the nature of the activity and the mission of the DOE program involved.

For example, a major repair project at Brookhaven National Laboratory exceeding \$2 million would be funded as a construction line item. Projects costing less than \$2 million would be proposed as either overhead-funded projects or funded by direct program operating funds. The groundwater monitoring effort associated with legacy contamination clean-up is supported by operating funds from Environmental Management. Other groundwater monitoring on the Brookhaven site is accommodated through overhead funds.

Particularly for multi-program sites like Brookhaven National Laboratory, there is no single headquarters element responsible for tracking the full suite of ES&H and infrastructure-related expenditures across programs and funding mechanisms, especially when laboratory overhead is involved. Although Energy Research is the “landlord” for Brookhaven National Laboratory, it does not track nor advocate Environmental Management expenditures. Nor does it oversee Nuclear Energy’s expenditures for ES&H at the reactor. However, Energy Research does provide direct funds for general purpose facilities and maintenance needs at the Laboratory.

The Department has provided guidance to the Laboratories for a consistent approach to identifying and prioritizing ES&H and infrastructure needs, but it does not have a process whereby these needs are reviewed across programs at individual sites or across sites in a corporate review process for budget formulation or consequent execution. From time to time, the Department has focused on these needs at its Laboratories and has successfully augmented funding or proposed to augment funding specifically for ES&H and related infrastructure needs. Often these proposals have not been successful, particularly for the Energy Research laboratories, and would benefit from corporate focus, prioritization, and advocacy with both the Office of Management and Budget and the Congress.

Across the DOE sites, each laboratory can identify a backlog of projects and activities that would improve the situation for ES&H compliance, prevent deterioration that could lead to ES&H threats, or remove inactive facilities that require continuing standby and maintenance costs to prevent ES&H threats.

The current constrained out-year budget targets, especially for the non-defense programs, and the lack of overall support for this kind of expenditure generally is not an incentive for programs to budget up-front for these kinds of projects and activities. Essentially, a Principal Secretarial Officer has to choose between diminishing program mission effort or putting forward plans that may be stricken from the budget.

In a time of shrinking budgets, there is pressure to absorb ES&H and infrastructure costs through overhead, or to postpone some projects. The end result is the continuing deterioration of laboratory facilities and a process that lacks the information necessary to manage the laboratories. Also, pressure to absorb such costs in overhead is counter to the general direction to reduce overhead at the laboratories.

The recommendation is to establish a DOE corporate process for ES&H and infrastructure budget formulation and execution starting with the formulation of the FY 99

budget. Within this process, each landlord would bring forward prioritized budgets for their sites and balance them with priorities of other landlords.

The Office of Environment, Safety and Health, in conjunction with the Chief Financial Officer, has developed an ES&H crosscut budget process that could form the basis for the FY 99 review. However, this process does not fully accommodate the broader needs of infrastructure development nor does it provide a basis for tracking execution at complex and diverse sites. Such a corporate process would allow the agency to compare progress in working down critical items in the laboratories' backlogs or ascertain what resources are necessary.

Action 2

Establish a Corporate Budget Formulation and Execution Process for ES&H and Infrastructure

| Dates | Milestones | Lead |
|--------------|---|-------------------------|
| 7/97 | Strengthen Corporate ES&H Budget Formulation Process | Chief Financial Officer |
| 9/97 | Establish FY99 ES&H priorities within targets | Chief Financial Officer |
| 10/97 | Establish process for tracking ES&H projects in overhead at Brookhaven National Lab | Chief Financial Officer |
| 12/97 | Develop ES&H Execution tracking process | Chief Financial Officer |
| 7/98 | Full implementation for FY2000 formulation & execution | Chief Financial Officer |
| 5/98 | Assess expansion of process to other infrastructure elements | Chief Financial Officer |

3.0 Strengthen Energy Research Organizational Focus on ES&H and Laboratory Operations

The Office of Energy Research has had an Office of ES&H Technical Support providing policy, guidance, and oversight for nearly seven years. Energy Research also has had an Office of Laboratory Policy or Planning since its creation in 1977. However, Energy Research's role as landlord for multi-program laboratories has grown over the years. For example, landlord responsibilities for Oak Ridge National Laboratory and Argonne National Laboratory were assumed by Energy Research in the early 1980s. Pacific Northwest National Laboratory was assigned to Energy Research in the mid 1980s. The role of other Principal Secretarial Officers at Energy Research's multi-program sites became more complex with the creation of the Office of Environmental Management in 1990, and the assignment in 1991 of the Office of Nuclear Energy to be responsible for operating Energy Research's research reactors.

Action 3.0 will strengthen Energy Research's ability to manage all of its laboratories, including Brookhaven National Laboratory, as it continues to move toward the integration of scientific work with the best safety and environmental practices. This action will raise the visibility of ES&H and infrastructure for science, complementing the commitment to ES&H expected for all technical program managers.

The authority for functions of ES&H and infrastructure are widely distributed across the Office of Energy Research. The lack of clarity and operational difficulty that this has presented within Energy Research and our Laboratories has been recognized prior to the findings at Brookhaven National Laboratory. A working group led by the Deputy Director of Energy Research has recommended several options for clarifying these activities and taking better advantage of the technical skills within the Office of Energy Research.

Action 3.1

Establish Energy
Research Associate
Director for
Laboratory
Operations &
ES&H

The Director of Energy Research places high priority on corporate ES&H and infrastructure performance. To enhance responsiveness, ensure accountability, and focus the existing resources and skills mix for ES&H and infrastructure, Energy Research will reorganize to establish an Associate Director for Laboratory Operations and ES&H. This will centralize and strengthen the Energy Research corporate focus on ES&H and infrastructure, allowing management to balance the priorities of scientific research and ES&H protection.

As part of this reorganization, all Energy Research Program Staff will be expected to know the value of integrated ES&H activities and will track ES&H performance as well as scientific performance in their programs. The Director of Energy Research will provide each Associate Director of Energy Research with clear expectations and responsibilities for ES&H performance in their program. The Director will use the annual performance appraisal, in addition to more frequent but less formal contacts, to hold each Associate Director accountable for ES&H performance. In turn, each Associate Director of Energy Research will provide their Program Staff with clear roles and responsibilities and will hold Program Staff to similarly high expectation for integrating ES&H into program activities. The new Associate Director for Laboratory Operations and ES&H will assist the Director of Energy Research in developing clear expectations for ES&H performance, and integrating DOE policies and directives on ES&H with best business practices.

Program Staff and managers involved in activities that may have associated ES&H hazards will receive the necessary training to manage programs safely and environmentally responsibly. The new Associate Director for Laboratory Operations and ES&H will assist the other program Associate Directors in identifying and providing specific ES&H training for their Program Staff.

Constraints on staffing and program direction budgets require Energy Research to make more efficient use of existing staff and to preserve the broad technical skills mix required by the diversity of research activities supported. In the reorganization, each of the Energy Research program offices will have an ES&H specialist

to manage and coordinate the ES&H responsibilities of that office. The Office of the Associate Director for Laboratory Operations and ES&H will both advocate and manage the integration of relevant ES&H and infrastructure needs so that Program Staff and program ES&H specialists can draw upon the expertise and skills mix, as needed, on specific actions.

The Office of the Associate Director for Laboratory Operations and ES&H will also be responsible for making budget recommendations and will track budget execution for both ES&H and laboratory infrastructure across all of the Energy Research laboratories. This organization will provide staffing and analysis for the operation of the Headquarters - Brookhaven Management Council discussed in Action 1.2. An urgent issue will be analysis and recommendations for FY 98 and 99 ES&H and infrastructure requirements at Brookhaven National Laboratory. Following implementation of these actions, Energy Research will work on similar issues with its other laboratories as needed.

Measures of ES&H performance now used by the Energy Research laboratory contractors will be reviewed by the Director and Associate Directors of Energy Research to better balance ES&H expectations with scientific performance.

The reorganization of the Office of Energy Research will clearly identify and delineate prescribed headquarters roles and responsibilities for infrastructure and ES&H for Brookhaven National Laboratory and all Energy Research laboratories. The new organization will also provide an Energy Research focus for other operational issues at the Energy Research Laboratories.

| Dates | Milestones | Lead |
|--------------|--|-----------------------|
| 6/97 | Discussions with Union | Dir., Energy Research |
| 8/97 | Implement Energy Research reorganization | Dir., Energy Research |

Action 3.2

Benchmark Energy Research Labs versus Industry and other Government Labs

Benchmarking is a practice currently utilized in both the private and public sector to compare practices across an industry to ascertain industry standards and “best business practices” for a range of activities. Benchmarking ES&H practices will permit Energy Research to integrate ES&H more fully into its science and technology mission. The DOE Office of Environment, Safety, and Health has used benchmarking in the past to help establish ES&H expectations for the entire DOE complex. In addition, the Office of Environmental Management has undertaken benchmarking efforts for clean-up and restoration. To benefit from these studies, Energy Research will examine their observations and experiences.

Benchmarking is the first step. Sustained leadership and commitment are key to sustained cultural change in an organization. The Director and Deputy Director of Energy Research will lead the Energy Research effort, which will include senior Energy Research and Laboratory leaders with participation from DOE field organizations. A commitment by Brookhaven National Laboratory leadership to couple excellence in scientific research and safety is absolutely required. Only leadership at the top can affect the full integration of ES&H into the science culture of the Laboratory.

Energy Research will request the assistance of the DOE Laboratory Operations Board in identifying R&D organizations in other agencies and in private industry that will be useful benchmarks. Management, budget, and business infrastructure systems employed by these external benchmark organizations will be examined for: (1) Best Business Practices and (2) Lessons Learned that can be applied to Energy Research’s internal organization and management of its laboratories. This effort will allow Energy Research to improve management of all of its laboratories including Brookhaven National Laboratory.

| Dates | Milestones | Lead |
|--------------|--|-----------------------|
| 7/97 | Identify Organizations; initiate benchmarking | Dir., Energy Research |
| 3/98 | Complete Report | Dir., Energy Research |
| 3/98 | Work with other Laboratories to apply lessons learned as appropriate and facilitate continuous improvement | Dir., Energy Research |

4.0 Change the ES&H Management Culture of DOE and Brookhaven National Laboratory

DOE and the Brookhaven National Laboratory will bring change in their management culture to integrate the principles and functions of ES&H management into work at Brookhaven National Laboratory. Energy Research and the DOE field offices, including the DOE Brookhaven Group on site, are putting in place all elements of the Integrated Safety (ES&H) Management System Policy (DOE P 450.4).

Additional activities are underway at the DOE field and site offices, including the DOE Chicago Operations Office and the DOE Brookhaven Group on site, to aggressively implement the Integrated Safety Management System. Specific activities for both DOE and Brookhaven National Laboratory will be detailed in an implementation plan that will serve as a working blueprint of specific tasks necessary for successful completion of the actions in this Plan.

As the organizational changes described in this Plan take place, additional actions will be undertaken to implement fully Integrated Safety Management. However, implementation of Integrated Safety Management will not wait for the changes in management structure and will be implemented at the working level.

Key to success is strong leadership. Such leadership begins with the actions of this Plan. Energy Research, the DOE Brookhaven Group on site, and the interim Director of Brookhaven National Laboratory will continue to strengthen this leadership. The new Associate Director of Energy Research for Laboratory Operations and ES&H (see Action 3.1) will assist the program Associate Directors of Energy Research, the DOE Brookhaven Group, and Brookhaven National Laboratory to tailor and implement the functions of DOE Integrated Safety Management to the specific work and hazards at Brookhaven National Laboratory.

Brookhaven National Laboratory will take aggressive action, through its Management Systems Improvement Program, to change how science and ES&H are managed by integrating ES&H into the fabric of doing the

Laboratory's scientific business. Laboratory leadership is key to cultural change. The single most important factor is that the new director of Brookhaven National Laboratory has a vision for change and a vision for integrating excellence in ES&H with excellence in science. Training courses and memoranda will not change how people work or how decisions are made, without a driving force at the highest levels of Brookhaven National Laboratory management.

This Brookhaven National Laboratory effort is modeled on the successful process used at the Pacific Northwest National Laboratory. The ultimate success of any effort such as this depends critically on the involvement and long-term commitment of laboratory leadership. Brookhaven National Laboratory's interim leadership has fully engaged the Laboratory's present management structure in this process. The re-competition of the contract and expected changes that it will bring will not weaken this effort. The Brookhaven National Laboratory Program will provide a quick-start agenda for the new contractor under the leadership and guidance of the Office of Energy Research and the DOE Brookhaven Group on site.

The Brookhaven National Laboratory approach is organized along three initiatives: 1) leadership, 2) Integrated Safety Management System, and 3) communications. Each initiative has an assigned team of senior managers as leaders.

The Leadership Initiative encompasses all actions necessary to increase the senior-level focus on ES&H at Brookhaven National Laboratory and to address the findings of the Oversight Report. Several structural changes that have already been implemented include creation of a:

- new Deputy Director position at Brookhaven National Laboratory that will oversee all non-scientific operations at the Laboratory;
- new Public Affairs management position;
- Leadership Council; and
- Management Advisory Group involving regulatory agency representatives.

This Leadership initiative also includes activities to establish for Brookhaven National Laboratory:

- greater formality in roles, responsibilities, authority and accountability for senior management;
- individual and organizational performance goals and feedback systems;
- management internship program and executive development program to ensure continuing excellence in Laboratory management; and
- an upgraded institutional planning process.

Perhaps most importantly, senior DOE and Brookhaven National Laboratory leadership will send a strong message of commitment to culture change in pursuit of excellence in ES&H performance at Brookhaven National Laboratory.

The Brookhaven National Laboratory Integrated Safety Management System Initiative will be highly interactive with the other Brookhaven National Laboratory initiatives and includes all training, process development, review, and documentation needed to address the areas for improvement identified in the Oversight Report and to bring Brookhaven National Laboratory ES&H performance to world class levels of performance, consistent with DOE's Integrated Safety Management System. Among the planned activities to implement Integrated Safety Management at Brookhaven are:

- integrated safety management in the goals, principles, and functions;
- the implementation of a Work Smart Standards process that includes enhanced work planning concepts, redesign of the risk prioritization process used to guide allocation of resources, extension of work management procedures throughout the Laboratory, and development of new and more comprehensive performance measurement and reporting systems.

A number of activities already in progress at Brookhaven National Laboratory will be completed. These activities will be described in the detailed implementation plan.

The Communications Initiative will include working in partnership with DOE at all levels to improve relationships with all stakeholders. This Brookhaven National Laboratory initiative is integrated with Action 5.0, Expand Community Involvement and Laboratory Outreach. A major element of this initiative is a strategic participation plan that will provide a structured way to interact with all audiences including employees, community members, elected representatives, and the media. The planning process will include review of all available tools and resources for outreach, and will also identify specific roles and responsibilities.

Action 4

Change the ES&H Management Culture of DOE and the Brookhaven National Laboratory

| Dates | Milestones | Lead |
|--------------|---|--------------------------------|
| 5/97 | Interim Brookhaven Laboratory Leadership Team in place | Associated Universities, Inc. |
| 5/97 | Interim DOE Brookhaven Group Executive Manager in place | Secretary of Energy |
| 5/97 | Brookhaven Laboratory Leadership Council formed; Management Systems Improvement Program initiated | Brookhaven National Laboratory |
| 6/97 | Action Plan Draft completed for Public Comment | Energy Research |
| 7/97 | Integrated Safety Management System Workshop at Brookhaven | Energy Research |
| 8/97 | Management System Improvement Program Plan completed | Brookhaven National Laboratory |
| 9/97 | Complete an organizational culture survey to benchmark management culture change | Brookhaven National Laboratory |
| 9/97 | Laboratory's Integrated Safety Management System Plan Approved | DOE Brookhaven Group on site |
| 10/97 | Work Smart Standards initiated, consistent with approved plan (see above) | DOE Brookhaven Group on site |

5.0 Expand Community Involvement and Laboratory Outreach

Community relations was one of Secretary Peña's greatest concerns about the activities at Brookhaven National Laboratory. The Department has learned that public trust is difficult to earn but critical to achieving success in its missions. Although the Laboratory had met its legal obligations, including Superfund environmental requirements, and conducted outreach such as tours and meetings, the Laboratory did not have a systematic approach and commitment to interact with the local community. Secretary Peña made it clear that this will change: DOE and Brookhaven National Laboratory are committed to promoting greater community involvement in the Laboratory.

The interim approach DOE and Brookhaven National Laboratory have taken to handle the tritium plume related to the High Flux Beam Reactor serves as a model for community involvement in decision-making.

Since the discovery of a tritium plume in groundwater south of the High Flux Beam Reactor, DOE and Brookhaven National Laboratory have involved Suffolk County and state officials in the execution of the tritium remediation plan. In addition, "poster sessions" were held with community members to explain the proposed approach to remediating the plume. Regulators and other officials helped finalize and formulate decisions and will continue to do so.

Public outreach is not limited to decision-making on environment, safety and health issues. Brookhaven National Laboratory has a robust educational program that benefits the community. Since 1989, Brookhaven National Laboratory has supported science and technical education for minorities and women, encouraged hands-on learning with kindergarten to twelfth graders as well as undergraduates, and has offered a summer science camp to local students, among other activities. These are important and positive ways that Brookhaven National Laboratory is a good neighbor in Suffolk County and on Long Island.

Action 5.1

Expand
Participation in
Environmental
Evaluation

In general, DOE assures continued cooperation with county regulators for environment, safety and health and other decision-making. Specifically, the Department invited county regulators to participate with the DOE Brookhaven Group and the Environmental Protection Agency (EPA) during Phases II and III of EPA's environmental evaluation of Brookhaven National Laboratory to be initiated in July 1997.

| Date | Milestone | Lead |
|------|--|------------------------------------|
| 7/97 | Initiate Phase II and III EPA Environmental Evaluation | DOE Brookhaven Group on site |

Action 5.2

Increase access to
Brookhaven
National
Laboratory and
Laboratory
Information

Currently, physical access to Brookhaven National Laboratory is limited to employees, subcontractors, or visitors with official business at the Laboratory. Members of the public cannot normally gain access to the site, unless invited. A guard is posted at the main gate 24 hours a day. This lack of access has promoted a sense of secrecy about Laboratory activities and fueled misperceptions that the Laboratory conducts secret or dangerous research. DOE is evaluating options to increase public access to the site, in addition to public tours and events currently conducted. Options to expand access will be weighed against factors of employee and public safety as well as property protection.

In addition, DOE recognizes the need to make information about Brookhaven National Laboratory more available to the public. Information and data are available through written requests to the Department of Energy and on the BNL Community Information Homepage (URL: www.doe.bnl.gov) to those members of the public who have access to the Internet. Information on the Superfund administrative record and supporting documentation is available through local public libraries.

DOE and Brookhaven will establish comprehensive information databases for general public access. This will include expansion of materials available through local libraries and local reading rooms and an increase in the availability of information and data through the Internet. Information databases will include

environment, safety and health information as well as Brookhaven National Laboratory scientific and program-related information.

| Date | Milestone | Lead |
|------|---|---------------------------------|
| 5/97 | Begin immediately to increase public access to Laboratory Information | DOE Brookhaven Group on site |

Action 5.3

Institutionalize Public Participation Through Formal and Informal Channels

DOE and Brookhaven National Laboratory will take a number of steps to institutionalize public participation at the Laboratory. These steps will help ensure that DOE and the Laboratory meet commitments to the community. DOE has already named Frank Crescenzo, Deputy Manager of the Brookhaven Group, as the top official for community involvement, and is currently seeking additional staff to support public participation on behalf of DOE. These individuals will help serve as bridges between the community and Brookhaven National Laboratory and be internal advocates and "watchdogs" for public participation.

DOE will conduct more frequent interactive sessions with the public to exchange information, answer questions, and obtain feedback on Laboratory activities. These sessions will be conducted on an as-needed basis, for example, initiating "poster sessions" or community meetings on specific areas of concern.

DOE also welcomes a more formal organization that can offer guidance, input and advice to Brookhaven National Laboratory. A community advisory group -- a standard organization at many DOE sites -- can provide citizens with a mechanism for providing input into the early stages of DOE's decision-making processes. To be successful, any form of advisory group would need to meet community expectations for format, scope and membership. DOE and Brookhaven National Laboratory have already begun to assess community attitudes, expectations, and preferred format about citizen's advisory boards. DOE will finalize these discussions with the expected goal of forming a Brookhaven National Laboratory Citizen's Advisory Board or similar organization that meets the needs of the community.

DOE and Brookhaven National Laboratory have already begun to formalize expanded community involvement by developing an outline of principles and goals for public involvement with actions, including those listed here, to improve community trust and confidence.

| Date | Milestone | Lead |
|------|--|------------------------------|
| 5/97 | Assess community leaders' preferred formats for community involvement, such as establishment of a Citizen's Advisory Board | DOE Brookhaven Group on site |
| 6/97 | Complete draft plan with findings and recommendations; gain public input | DOE Brookhaven Group on site |

Action 5.4

Conduct
Benchmarking for
Community
Participation

Action 3.2 outlines how the Department of Energy will conduct benchmarking studies -- comparative research that establishes industry standards for a range of activities. This benchmarking ensures that standards of conduct are high and consistent with comparable industries or sites within DOE. As part of this effort, DOE will collect and evaluate examples of community participation from across the DOE laboratory complex and at select commercial sites. This effort will guide the expansion of public participation at Brookhaven National Laboratory and ensure that new and effective approaches tested elsewhere can be incorporated in Brookhaven activities.

| Date | Milestone | Lead |
|------|-----------------------|-----------------------|
| 7/97 | Initiate benchmarking | Dir., Energy Research |

Action 5.5

Include Public
Participation and
Input in Selection of
a Contractor for
Brookhaven
National
Laboratory

An action announced by John Wagoner in late May is already underway to include public input in the selection of the contractor to operate Brookhaven National Laboratory. Public meetings have been held to explain the contracting selection process. The public also had an opportunity to provide input to the Strategic Solicitation Plan, which describes the characteristics and qualifications DOE will use in selecting a new contractor.

Finally, announcements on the contract have outlined a critical requirement for the next contractor: to demonstrate success in “developing and implementing community involvement programs for both the local community and regulators (federal, state, local) that focus on a scientific mission, as well as ES&H, and environmental activities.” This will ensure that future contractors will establish public participation as a high priority.

| Date | Milestone | Lead |
|-------------|---|-------------------------------|
| 5/97 | Procurement Process Public Involvement | DOE Chicago Operations Office |
| 6/97 | Issue Strategic Solicitation Plan | DOE Chicago Operations Office |
| 6/97 | Contract Proposal Outreach Conferences | DOE Chicago Operations Office |
| 6/97 | Public Comments Incorporated into Contract Request for Proposal | DOE Chicago Operations Office |

6.0 Involve the Local and Scientific Communities in Deciding the Future of the High Flux Beam Reactor

The Oversight Report did not address the future of the High Flux Beam Reactor. However, the local community and the scientific community expressed interest in a decision. As a consequence, the timeline and factors for reaching a decision are provided in this report.

The High Flux Beam Reactor is a nuclear reactor built in the 1960s for use in various types of research. Today, it is still one of the best U.S. research centers for neutron scattering and a valuable tool for the study of materials, including those relevant to the Department's missions. At the time of the discovery of a tritium plume in the groundwater south of the High Flux Beam Reactor spent fuel pool, the High Flux Beam Reactor had been shut down for refueling. Restart of the High Flux Beam Reactor will require expenditures for safety and environmental upgrades, including those to specifically ensure no future contamination of the groundwater.

The Secretary will decide the future activity of the High Flux Beam Reactor and direct the preparations for an appropriate environmental review process. A decision on whether to restart the High Flux Beam Reactor must balance: (1) the value of the science information produced using the High Flux Beam Reactor, (2) the cost of required safety and environmental upgrades, and (3) any community concerns about future reactor operations.

The Director of the Office of Energy Research will make a recommendation to the Secretary taking into consideration (1) input from the public to be obtained through public hearings, (2) input from the contractor regarding reactor safety, and (3) the advice of the Basic Energy Sciences Advisory Committee. The latter will consider the future of the High Flux Beam Reactor in the context of other operating neutron sources and reasonable future year budget scenarios. The Office of Nuclear Energy, Science and Technology will assist in preparing the recommendation with respect to reactor safety considerations.

Community input will be sought through a series of public forums to be held near the Brookhaven site. The views expressed by local government officials, community groups and individual citizens will be summarized for input to the Department's decision-making process.

Action 6

Involve the Local and Scientific Communities in deciding the Future of the High Flux Beam Reactor

| Date | Milestone | Lead |
|-------------|--|--|
| 7/97-10/97 | Basic Energy Sciences Advisory Committee Evaluation | Energy Research |
| 11/97 | Basic Energy Sciences Advisory Committee recommendations | Energy Research |
| 11/97 | New contract awarded | DOE Brookhaven Group |
| 11/97-12/97 | Conduct Public Meetings | DOE Brookhaven Group |
| 12 /97 | Contractor Input | Contractor, Brookhaven National Laboratory |
| 1/98 | Recommendation to Secretary | Energy Research |